

REMARKS

Claims 1-20 have been rejected in the Office Action of December 20, 2000. Claims 1-41 have been subject to restriction and/or election requirement. Claims 21-41 have been withdrawn from consideration and have, therefore, been canceled. Claim 6 has also been canceled. Claims 1, 7, and 11 have been amended. Claims 1 to 5 and 7 to 20 are, therefore, presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

Election/restrictions:

The Examiner has required restriction to one of the following inventions under 35 U.S.C. §121:

- I. Claims 1-20, drawn to imaging material, classified in class 430, subclass 619.
- II. Claims 21-27, drawn to process, classified in class 430, subclass 336.
- III. Claims 28-34, drawn to process, classified in class 356, subclass 3.09.
- IV. Claims 35-37, drawn to process, classified in class 399, subclass 32.
- V. Claims 38-39, drawn to process, classified in class 356, subclass 30.
- VI. Claim 41, drawn to process, classified in class 430, subclass 350.

During a telephone conversation with Applicant's representative, Edith A. Rice, on November 1, 2000 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20. Affirmation of this election is hereby made by Applicants. Claims 21-41 have been withdrawn from further consideration by the Examiner, 37 CFR § 1.142(b), as being drawn to a non-elected invention, and Applicants have canceled these claims in the present amendment. The inventorship is unchanged.

Allowable Subject Matter:

Applicants thank the Examiner for the indication of allowable subject matter, subject to the following rejections under 35 USC § 112.

Rejection of Claims 1-20 under 35 USC § 112:

Claims 1-20 have been rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The Examiner states that the specification fails to provide an

adequate written description as how to make the compound wherein PUG is a coupler, color inhibitor, inhibitor releasing developer, dyes precursor, silver ion fixing agent, electron transfer agent, silver solvent, silver halide complexing agent, reductone, image toner, pre-processing or post-processing image stabilizer, hardener, tanning agent, ultraviolet radiation absorber, nucleator, chemical or spectral sensitizer, desensitizer, surfactant, or precursors thereof. The Examiner further states that the specification fails to provide a process as how to connect that recited PUG to the structure of formula (I) and that, in the absence of providing a process of linking of each of PUG to the general formula (I), it would not be possible for the worker of ordinary skill in the art to form the compound within the scope of the claimed PUG to make the claimed material and process.

The Examiner also states that the specification fails to provide an adequate written description of "link 1" and "link2". The Examiner states that, in the absence of providing a clear guidance as how to select the link 1 and link 2, it would not be possible to the skill in the art to select the link1 and link2 other than the exemplified link1 and link2 to make the compound within the scope of formula I.

Also, the Examiner states that the specification fails to provide an adequate written description of the "electron-withdrawing group" presented in claims 1 and 11, and that the specification fails to clearly describe the term "ring" presented in claims 1 and 11.

This rejection is partially traversed. Regarding the use of the word PUG in claim 1, Applicants submit that the skilled artisan could readily connect the recited PUGs to the structure of formula I. Applicants have provided specific representative examples of connecting, for example, a developing agent, a development inhibitor, and a bleach accelerator. Typically, connections can be made via common acylation or sulfonation reactions, as exemplified. The skilled artisan would readily appreciate that an amine, hydroxy, active methylene, or sulfur group on a PUG can be used as the point of connection to an C, N or S atom on the PUG.

Regarding the written description of "link 1" and "link 2," Applicants have amended claim 1 by incorporating the definition of link 1 and link 2 in claim 6. This is believed to obviate this rejection.

Regarding the "electron-withdrawing group," the term is well understood to the skilled artisan, as shown by the attached excerpt from a standard reference in organic chemistry, ADVANCED ORGANIC CHEMISTRY, March, Jerry (4th edition John Wiley & Sons), pages 17 to 19. Furthermore, the original specification provides a substantial number of examples of such electron-withdrawing groups, in 39 compounds, specifically shown on pages 18 to 27. These include (but are not limited to), for example, CN in D-1, CO in D-9, SO in D-15, SO₂ in D-16, PO in D-23, NO₂ in D-24, and the substituted aryl group in D-27.

Regarding the term "ring" used in claims 1 and 11 with respect to two W groups forming a ring, or R₁₂ and T forming a ring, the specification clearly describes the term "ring." Representative examples are shown in D-2, D-3, D-4, D-10, D-11, D-17, D-18, D-21, and D-22. Clearly, the term ring cannot be limited to aryl or aliphatic cyclic ring systems, but includes a variety of structures. It is noted further that the term ring is actually provided with further examples and meaning by the definitions of the terms W, R₁₂ and T, which are clearly defined.

Claims 1-2, 6-10, 12 and 14-20 have been rejected under 35 USC § 112, first paragraph, because the specification, while being enabling for the developing agent as PUG, does not reasonably provide enablement for the coupler, color inhibitor, inhibitor releasing developer, dyes precursor, silver ion fixing agent, electron transfer agent, silver solvent, silver halide complexing agent, reductone, image toner, pre-processing or post-processing image stabilizer, hardener, tanning agent, ultraviolet radiation absorber, nucleator, chemical or spectral sensitizer, desensitizer, surfactant, or precursors thereof specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with the claims. The Examiner states that the specification discloses only the compound of the preferred embodiment wherein the PUG is a developer.

This rejection is respectfully traversed. Applicants have provided specific representative examples of connecting, for example, a developing agent, a development inhibitor, and a bleach accelerator (see for example, the last three compounds on page 26). The PUG per se is not Applicants' invention, and can be conventional. The core of Applicants' invention is the blocking group, which is

adequately exemplified. Applicants have shown that such blocking groups can be used to incorporate photographically useful compounds in a photographic system and they are stable (until processing) and are then effectively released. The invention would clearly be useful with respect to any of the PUGs, for example, in a photothermographic system, where good release properties are desired.

Applicants have provided the most examples of a PUG as a developing agent simply because developing agents can be viewed as having the most demands and being the most important and critical blocked component in the system. If the blocking group works effectively with a developing agent, it would work effectively with the other types of PUGs mentioned. Applicants' invention and contribution to the art should not be limited to the most single most important PUG, but reasonably applies to the specified group of PUGs.

Claims 1-20 have been rejected under 35 USC § 112, first paragraph, because the specification, while being enabling for photographic, photothermographic and thermographic imaging layer, does not reasonably provide enablement for any other imaging layer. The Examiner states that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims, since only photographic, photothermographic, and thermographic element are disclosed in the specification.

Applicants have amended claim 1 to limit the imaging element to a photographic, photothermographic, or thermographic element. This is believed to obviate this rejection.

Claims 1-20 have been rejected under 35 USC § 112, first paragraph, because the specification, while being enabling for link 1 and link 2 provided on page 9 of the specification, does not reasonably provide enablement for another link 1 and link 2. The Examiner states that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims, and no other guidance as how to select link 1 and link 2 other than those exemplified on page 9 was provided.

Claim 1 has now been amended to define link 1 and link 2, as defined on pages 8-9 (Structure II). This is believed to obviate this rejection.

Claims 1-20 have been rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner states that the scope of protection sought for the "ring" and "bicyclic substituent" in claim 1, 11 are indefinite for the specification fails to define the scope thereof or the ring or the bicyclic substituent.

This rejection is respectfully traversed. Representative examples of rings are shown in D-2, D-3, D-4, D-10, D-11, D-17, D-18, D-21, and D-22. Clearly, the term ring cannot be limited strictly to aryl or aliphatic cyclic ring systems, but includes a variety of structures. It is noted further that the term ring is actually provided with further examples and meaning by the definitions of the terms W, R₁₂ and T, which are clearly defined. Similarly, the bicyclic structure with respect to the W group is provided meaning by the clear definition of W, for example, one skilled in the art could readily appreciate that three alkyl groups could be replaced by a bicyclic structure.

The Examiner also states that the scope of "linking group" in claim 1 is unclear since the specification provides only a specific structure in the preferred embodiment.

The above amendment, with respect to the linking group, is believed to obviate this rejection.

The Examiner also states that the scope of protection sought for X, as "electron withdrawing group" in claim 1 and 10 is indefinite.

Applicants submit that one skilled in the art would readily appreciate what "electron-withdrawing groups" would be within the scope of the invention and that the present specification provides a substantial number of examples of such electron-withdrawing groups, in 39 compounds, specifically shown on pages 18 to 27. These include (but are not limited to), for example, CN in D-1, CO in D-9, SO in D-15, SO₂ in D-16, PO in D-23, NO₂ in D-24, and the substituted aryl group in D-27.

The Examiner states that the subscript "1" for "(Link 1)₁" in for the formula I in claim 1 renders the claim confusing since that subscript and the number "1" is the same.

Claim 1 has been amended to provide for a different font for the "1" with respect to Link 1.

The Examiner states that the claiming of X as "sulfonyo" group in claim 1 and 11 is unclear whether it means "sulfone", "sulfonyl" or otherwise.

The claims have been amended to recite "sulfonyl" as supported by the specification.

The Examiner states that the definition of "a" and "b" in claims 1, and 11 is not clear. The Examiner notes the language in claim 1 such as "if X is a sulfonyo group and a and 1 are each 1 and n and m are each 0, then t is 1 or 2; and if t is 2 the two T groups can combine to form a ring; b is 1 when X is divalent and 0 when X is monovalent, and the language in claim 11 wherein "a is 1 when X is monovalent and 1 and 1 or 2 when X is divalent; b is 0 when X is monovalent and 1 when X is divalent. The Examiner states that the value of a and b is not defined when X other than sulfonyo group.

Applicants respectfully submitted that the definition of a and b is defined irrespective of whether X is sulfonyl or not. The provision with respect to the sulfonyl group was mentioned merely to claim around prior art. However, a and b are defined so the structures cover either one or two PUGs as, for example both D-30 and D-16, and also to cover either a monovalent or divalent X as, for example, either D-8 or D-9.

Applicants thank the Examiner for the indication of allowable subject matter:

Double Patenting:

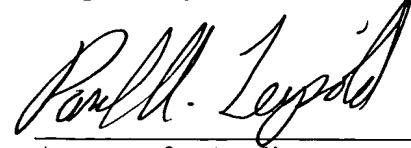
Claims 1-20 have been rejected under 35 USC § 101 as claiming the same invention as that of claims 1-20 of prior U.S. Patent No. 09/614,035. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented. The Examiner states that the claimed invention of both copending applications are identical.

It is believed that the claims in that application are not identical (the prior application does not recite the same "proviso" in claim 1 and the claims in the other (later) application cover additional compounds). Applicants offer to provide a terminal disclaimer in due course.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "Version With Markings to Show Changes Made."

Respectfully submitted,



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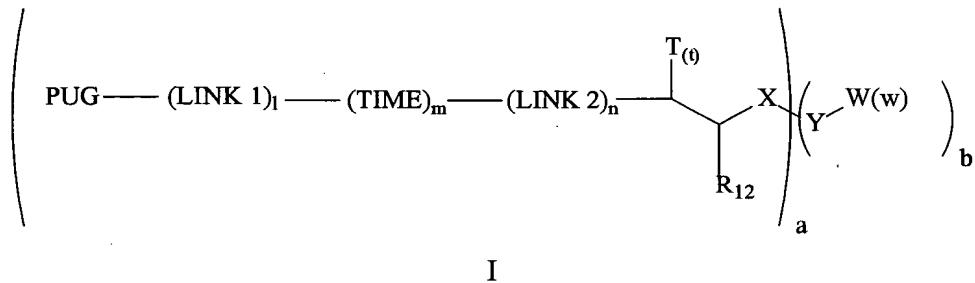
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Version With Markings to Show Changes Made

In the Claims:

Claims 1, 7, and 11 have been amended.

1. (Amended) An photographic, photothermographic, or thermographic imaging element comprising an imaging layer having associated therewith a compound of Structure I:



wherein:

PUG is a photographically useful group;

LINK 1 and LINK 2 are linking groups;

TIME is a timing group;

1 is 0 or 1;

m is 0, 1, or 2;

n is 0 or 1;

Y is C, N, O or S;

X is a substituted or unsubstituted aryl group or an electron-withdrawing group;

W is hydrogen, halogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group, or W can combine with T or R₁₂ to form a ring, w is 0 to 3 when Y is C, w is 0-2 when Y is N, and w is 0-1 when Y is O or S, when w is 2, the two W groups can combine to form a ring, and when w is 3, two W groups can combine to form a ring or three W groups can combine to form an aryl group or a bicyclic substituent;

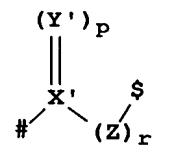
R_{12} is hydrogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group or R_{12} can combine with T to form a ring;

T is a substituted or unsubstituted alkyl cycloalkyl, aryl or six-membered heterocyclic group, t is 0, 1, or 2, with the proviso that when X is a cyano or sulfone group t is 1 or 2, when t is 2 the two T groups can combine to form a ring;

a is 1 or when X is divalent a is 1 or 2; and

b is 1 when X is divalent and 0 when X is monovalent;

where LINK 1 and LINK 2 is independently of Structure II:



II

wherein

X represents carbon or sulfur;

Y represents oxygen, sulfur or $N-R_1$, where R_1 is substituted or unsubstituted alkyl or substituted or unsubstituted aryl;

p is 1 or 2;

Z represents carbon, oxygen or sulfur;

r is 0 or 1;

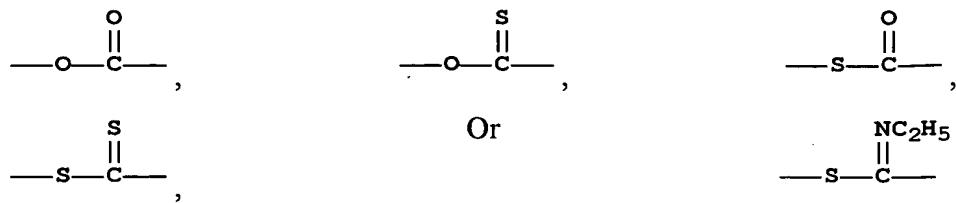
with the proviso that when X is carbon, both p and r are 1, when X is sulfur, Y is oxygen, p is 2 and r is 0;

denotes the bond to PUG (for LINK 1) or TIME (for LINK 2);

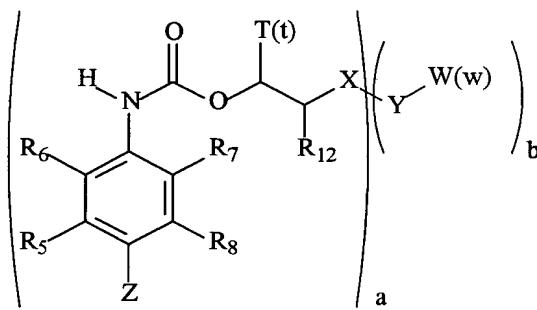
\$ denotes the bond to TIME (for LINK 1) or $T_{(t)}$ substituted carbon (for LINK 2).

Claim 6 has been deleted.

7. (Amended) An imaging element according to claim 61, where
LINK 1 and LINK 2 are the following:



11. (Amended) A photographic, photothermographic, or thermographic imaging element according to claim 1, wherein the compound of Structure I is of Structure III:



III

wherein:

Z is OH or NR₂R₃, where R₂ and R₃ are independently hydrogen or a substituted or unsubstituted alkyl group or R₂ and R₃ are connected to form a ring;

R₅, R₆, R₇, and R₈ are independently hydrogen, halogen, hydroxy, amino, alkoxy, carbonamido, sulfonamido, alkylsulfonamido or alkyl, or R₅ can connect with R₃ or R₆ and/or R₈ can connect to R₂ or R₇ to form a ring;

T is a substituted or unsubstituted alkyl cycloalkyl, aryl or six-membered heterocyclic group, t is 0, 1, or 2, with the proviso that when X is a cyano or sulfonyl group, t is 1 or 2, when t is 2, the two T groups can combine to form a ring;

R₁₂ is hydrogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group or R₁₂ can combine with T or W to form a ring;

X is a substituted or unsubstituted aryl group or an electron-withdrawing group;

Y is C, N, O or S;

a is 1 when X is monovalent and 1 or 2 when X is divalent;

b is 0 when X is monovalent and 1 when X is divalent;

W is hydrogen, halogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group, or W can combine with T to form a ring, w is 0 to 3 when Y is C, w is 0-2 when Y is N, and w is 0-1 when Y is O or S, when w is 2, the two W groups can combine to form a ring, and when w is 3, two W groups can combine to form a ring or three W groups can combine to form an aryl group or a bicyclic substituent.

Claims 6 and 21 to 41 have been deleted.